IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

ANDREAS BACHER ET AL.

Group Art Unit: 1796

Examiner: Vickey Nerangis

Serial No.: 10/618,936

Filed: July 14, 2003

For: SILANE-CONTAINING POLYVINYL ALCOHOL FOR COATING SLIPS

Attorney Docket No.: WAS 0595 PUSA

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF UNDER 37 CFR § 41.37

Mail Stop Appeal Brief- Patents
Commissioner for Patents
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief dated February 24, 2009, kindly substitute the attached Section III, "Status of Claims" , Section V, "Summary of Claimed Subject Matter & Section VII "Argument" (pages 2 through 6) with the attached revised pages (2 through 6).

The Commissioner is hereby authorized to charge any additional fees to our Deposit Account No. 02-3978.

Respectfully submitted,

ANDREAS BACHER et al.

By: _____

William G. Conger
Registration No. 31,209
Attorney/Agent for Applicant

Date: March 4, 2009

BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400; Fax: 248-358-3351

Attachments: pages 2 - 6

II. RELATED APPEALS AND INTERFERENCES

There are no appeals, interferences or judicial proceedings known to the Appellant, the Appellant's legal representative, or the Assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1, 4 - 7, 10 - 17, and 21 - 23 are pending in this application. Claims 1, 4 - 7, 10 - 15, 17 and 21 - 23 have been rejected and are the subject of this appeal[1]. Claims 2 - 3, 8 - 9, and 18 - 20 have been cancelled.

IV. STATUS OF AMENDMENTS

No amendment after final rejection has been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention of claim 1 is directed to silane-containing polyvinyl alcohol polymers consisting essentially of a completely or partially hydrolyzed vinyl ester copolymer with a degree of hydrolysis of 75 - 100 mol% (page 2, lines 22 - 25) obtained by free radical polymerization of vinyl acetate and from 1 to 30 mol%, based on polymer weight, of 1-methylvinyl acetate, and from 0.01 to 1 mol% (page 7, lines 1 - 3) of ethylenically unsaturated silane-containing monomers (page 2, line 25 to page 3, line 5; page 3, line 26) selected from the group enumerated in claim 1 (claim 5 as filed; page 5, lines 1 - 18).

Claim 17 is directed to a silane-containing polyvinyl alcohol polymer having a degree of hydrolysis of 97.5 to 100 mol% (page 3, lines 11 - 12), obtained by free radical polymerization (page 2, line 25) of vinyl acetate and 1 - 30 weight percent of 1-methylvinyl

[1]Claim 16 is not appealed only because it is a duplicate of claim 1, since it fails to further limit that claim.

acetate and 0.01 to 1 mol% (page 7, lines 1 - 3) of silane-containing ethylenically unsaturated monomers (page 7, lines 1 - 3).

Claims 5 and 22 further require a silane monomer to be one of vinyltrimethoxysilane, vinylmethyldimethoxysilane, vinyltriethoxysilane, and vinylmethyldiethoxysilane. (Specification, page 6, lines 25 - 26).

The modified polyvinyl alcohols are useful as a binder for coating slips (claims 7, 10 as filed; specification page 2, lines 15 - 20).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 4 - 7, 10 - 15, 17 and 21 - 23 stand rejected under 35 U.S.C §112 ¶1 for lack of written description for the numerical claim limitation "1".

B. Claims 1, 4 - 7, 10 - 15, 17, and 21 - 23 stand rejected under 35 U.S.C. § 103(a) over Schilling et al. U.S. 4,879,336 ("*Schilling*") in view of Maruyama et al. U.S. 4,617,239 ("*Maruyama*").

VII. ARGUMENT

A. The Claims Fully Comply With The Written Description Requirement

With respect to Ground of Rejection A, independent claims 1 and 17 stand or fall together. Claims 1, 4 - 7, 10 - 15, 17, and 21 - 23 have been rejected under 35 U.S.C. § 112 ¶1 as failing to comply with the written description requirement. Claims 1 and 17 recite the amount of ethylenically unsaturated silane to be "from 0.01 to 1 mol%". The Office refers to the specification, page 7, line 2, which recites "from 0.01 to 1.0 mol%".

This is the second time this case has been before the Board. In the Boards prior decision affirming the rejection of the claims under 35 U.S.C. § 103(a), the Board agreed with

the Examiner that Appellants showing of surprising and unexpected results was not commensurate with the scope of the claims, which had recited a silane monomer content of 0.01 to 10 weight percent. Appellants then narrowed the claim to the much narrower range of 0.01 to 1 weight percent, the example in the specification being right in the middle of this very narrow range, and supplied additional examples and comparative examples in the form of the Declaration of Dr. Andreas Bacher (Evidence Appendix) submitted in Appellants' response of May 27, 2008.

It is well established that a later added claim limitation need not be present in the specification "*in haec verba*," see *Fujikawa v. Wattanasin*, 93 F.3d, 1559, 1570; 39 USPQ2d 1895, 1904 (Fed. Cir. 1996), and must only "reasonably convey to the artisan that the inventor had possession . . . of the later claimed subject matter. "*Waldemar Link GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558; 31 USPQ2d 1855, 1857 (Fed. Cir. 1994). In doing so, the specification as a whole must be considered. *In re Wright,* 866 F.2d 422; 9 USPQ2d 1649 (Fed. Cir. 1988).

There is ordinarily no distinction in patent law between 1 and 1.0. The Federal Circuit has held that in an infringement analysis, for example, the range of equivalents is not affected by the number of significant digits in the particular number. In an analysis of a later added claim limitation for compliance with the written description requirement, the question is whether one skilled in the art, reading the specification, would conclude that the inventor was in possession, at the time of filing, of the later added claim limitation.[2]

That is abundantly clear here. The Appellants clearly contemplated the whole range of 0.01 to 10 mol%, of which "1" is within. Moreover, "1.0" is specifically designated. To say the inventor did not contemplate "1" when he stated 1.0 is nonsensical.

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[2]At any rate, Appellants are completely willing to amend the claim to read "1.0" rather than "1".

Moreover, the Board and the Federal Circuit have both sanctioned the later addition of terms such as "substantially" and "about" to the claims when these terms were not present in the specification. See, *e.g. Ex parte Butler*, 116 USPq 597 (POBA 1957), where the specification stated "at least part of the tin [component of a phosphor] must be in the stannous state", and the claim was amended to recite "a substantial part of the tin is present in the stannous state." The word "substantial" did not appear in the specification, and the Examiner rejected the claims under 35 U.S.C. § 112 ¶1. The Board reversed.

If an Appellant is allowed to add "substantially" and other qualifying terms such as "about", he or she is certainly entitled to use "1" instead of "1.0". One skilled in the art, reading the specification is immediately aware that Appellant had posses this range endpoint at the time the application was filed, and thus meets the written description requirement. *Noelle v. Ledermann*, 355 F.3d 1343, 1348 (Fed. Cir. 2004). See also, *Eiselstein v. Frank*, 52 F.3d 1035, 34 USPQ 2d 1467 (Fed. Cir. 1995) ("about 45%" supported by "45%"). Reversal of the rejection under 35 U.S.C. §112 ¶1 is respectfully solicited.

B. The Claims Are Non-Obvious Over *Schilling* In View of *Maruyama*.

1. With respect to claims 1, 4-7, 10-15, 17, and 21-23.

In rejecting the claims in the Office Action dated August 28, 2008, the Examiner incorporated the rejection set forth in paragraph 3 of the Office Action of January 31, 2008, incorporating this paragraph by reference.[3]

The subject invention is directed to silane-modified polyvinyl alcohols which are useful, in particular, as binders in coating slips, i.e. coatings which are commonly applied to paper to produce a smooth, ink-receptive surface. Prior art hydrophobicizing binders are typified by those of *Maruyama*, the Japanese priority document of which was published in

[3]However, in the meantime, the claims had been amended and the Declaration of Dr. Bacher made of record. It does thus not appear that the claims were adequately reconsidered in light of these changes.

1983. However, as indicated at the bottom of page 9 of the subject invention specification, while the claimed binders have excellent storage stability, prior art binders were deficient in this property. In the Examples, a subject invention polymer showed little viscosity increase over time (Table 3, page 13), while a prior art *Maruyama*-type polymer exhibited a severe increase in viscosity, a factor of 3.6 (360%). Appellants discovered that this increase in viscosity can be avoided by incorporating a minor amount of a 1-alkylvinyl ester into the copolymer in addition to the silane moieties. This is a highly surprising and unexpected discovery. Despite the some 19 years between the publication of *Maruyama* and the filing of the Appellants' priority application, no one had disclosed Appellants' method of increasing binder stability.

Schilling discloses conventional polyvinyl alcohols which are modified to contain 1-alkylvinyl ester moieties. In the Office Action of November 23, 2005, the Examiner indicated that *Schilling* teaches improved storage stability: "If applicant is referring to the improved storage stability, such *is* taught by Schilling (col. 2, lines 7-34)." However, this statement is incorrect.

The portion of *Schilling* referred to by the Examiner reads as follows:

> Due to their excellent pigment-binding power and support effect for optical brighteners, two serious disadvantages of these [prior art] cobinders are accepted for industrial application. Fully-saponified polyvinyl alcohols are virtually insoluble in water at room temperature. For conversion into an aqueous solution, a polyvinyl alcohol suspension must be stirred vigorously for a relatively long time at at least 90.degree. C. which ultimately encumbers the papermaking process due to the provision of dissolving stations and additional energy costs. The second disadvantage is linked with "pigment shock". When the polyvinyl alcohol solution is added to the pigment slurry, a momentary steep increase in the viscosity of the coating slips is produced. This can only be decreased rapidly with suitable stirrers which apply very high shear forces, or by adding additional auxiliaries, the so-called "anti-shock agents".
> (Col. 2, lines 7-34.)